



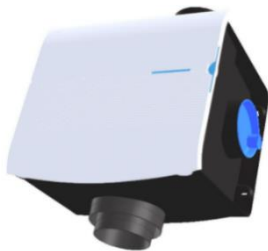
AIRVENT

Installation / Operation and Service Guide

RF MEV WH4H

Part No: 90001575

Mechanical Central Extract Ventilation
Unit with Built in Humidity Sensor

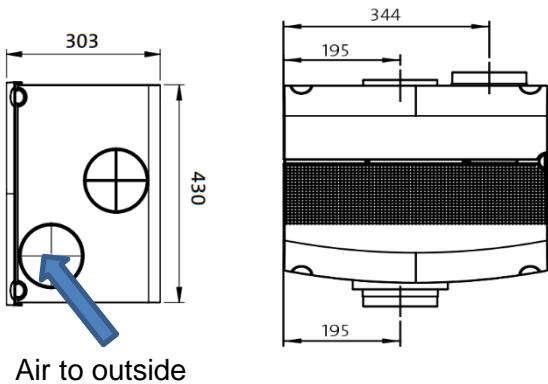
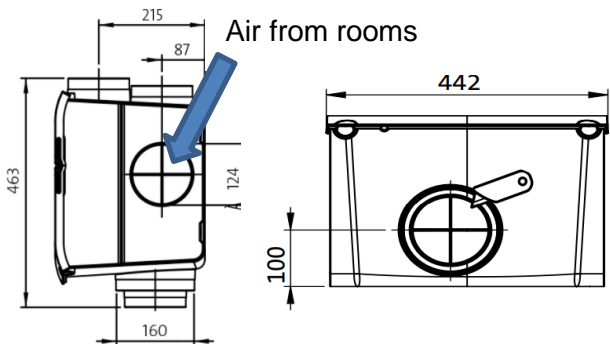


For unit versatility it is supplied without a controller. A choice of controllers is available. See page 12.

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Unit Dimensions



Unit Specifications

Voltage Required: 230V – 50Hz – 1Ph

Two setting choices with three fan speed bands in each available:

Low Bands = Two speeds in each – 70 to 138m³/h

Watts= 3 to 5

Medium Bands = Eight speeds in one and four in the other – 150 to 324 m³/h

Watts = 7 To 38

High Bands = Four speeds in one and eight in the other – 245 to 502 m³/h

Watts = 20 to 82

Weight: 4.4Kg

3 x 124Ø & 1 x 160Ø ports from rooms & 1 x 124Ø to outside

Transport and Storage

Units should be stored in their original packaging in a dry environment protected from the weather. If palletised quantities are stored or transported, it is recommended they are covered to protect against particulate damage and contamination.

Suitable storage temperatures are between -10°C and $+40^{\circ}\text{C}$.

Care should be taken when re-packing any unit to ensure the packaging is suitable for the required form of transport. Damage due to improper transportation, storage or installation is not covered under warranty. Care should be taken when lifting. Correct lifting techniques / apparatus should be used when necessary. Dropping or sharp blows to the fan can cause damage. Any damage to the fan or packaging should be inspected by a suitably qualified person or returned to Airflow Developments Ltd for inspection before use.

Fans should not be lifted or carried by an electrical lead, if fitted.

Electrical Installation

All electrical installations must be carried out by an approved electrician in accordance with the latest IET BS7671 Requirements for Electrical Installation, Low Voltage Directive 2014/35/EU, Machinery Directive 89/392/CE or the appropriate regulations in the country of installation. All fans require a 240V 50 Hz single phase supply. Electric circuit to be used should be isolated before any work is carried out.

All electrical connections and controls can be found under the unit's white, top protective cover held on by "D" shaped tabs. See fig.A page 10. The units electrical supply cable must be fitted through the two cable retaining paths moulded into the unit's electrical connection tray. As below.



Electrical Installation contd.

All cables should be suitably retained and enclosed where necessary to prevent damage taking place. A 3 x pole lockable isolation switch with a 3mm contact gap should be used on the mains supply to the unit.

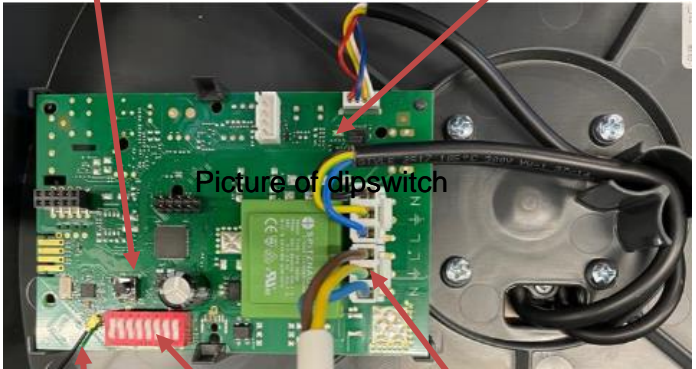
The unit is supplied already fitted with a 1 x metre long, three core cable as standard. Brown = Live. Blue = Neutral. Green / Yellow = Earth. This unit should be protected by using a 3amp inline fuse.

Before function testing the fan, ensure the impeller runs freely. Also refer to page 12, Pairing Remote Controls. Function testing should be carried out by switching the fan on for a short time. When the fan is running, checks should be carried out for: impeller rotation direction, undue noise or vibration and power consumption. Immediately switch off the fan should any problems be found, and contact Airflow Developments Ltd. Fan motors used are suitable for continuous running and have a rated duty type S1 (motor is suitable to this duty type and rating at which the fan may be operated for an unlimited period).

PCB Main Features

Push button

LED Red / Green

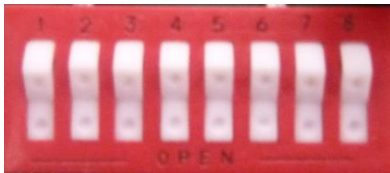


Picture of dipswitch

Mains power in
230V – 50 – 1Ph

Cable to RF
Receiver

DIP Switches



Mechanical Installation

Mechanical installation should only be carried out by a competent person. Fans are supplied ready for installation. Care should be taken when removing the fan from its packaging. Correct lifting techniques / apparatus should be used where necessary. Units should be inspected for any damage. If the Unit is found to be damaged, it should be returned to the supplier immediately. Units should be installed to a sufficiently solid structure giving adequate support. Fixings suitable for the mounting surface should be used. Airflow Developments Rubber mount part number 90001294 (set of four) can be used to help protect against mechanical noise transmission into the mounting surface.

Units are mounted by using the four moulded slots in the base of the extract duct connection box. See fig D page 10.

Units can be mounted at any angle or position. When mounting ensure there is no distortion to the fan case or duct connection box.

Mechanical Installation contd.

Fan Tray Lifting Points



A



PCB

B



C



Mounting Slots

D

Duct Connection

This unit has three 124mm and one 124/160mm diameter ports moulded on the extract duct connection box. Three ports are sealed off with blanking plates. The 124/160mm diameter port offers a choice of duct size, this is to help duct system pressure on higher airflows. Care should be taken when removing the 124mm diameter port and membrane to ensure no excess force is used which could cause irreputable damage. See page 3. Failure to remove the whole membrane could cause excess system pressure and noise.

Air is expelled to outside from the unit by the 124mm diameter open port in the fan mounting case. See page 3. If the ducting from this port is installed vertically a condensation trap should be fitted (Airflow part number: 90001242).

125mm diameter ridged ducting, or a ridged duct with at least 90% free surface area of 125mm diameter duct should be used. This is to keep system pressures to a minimum.

Duct Connection contd.

Final connections can be made with a short length of flexible ducting (Airflow part number: 52641009) and the correct sealing clamps (Airflow part number: 51849403). The use of excessive amounts of flexible ducting will result in high system pressures and a noisy system. Ridged duct connections should be sealed with a non-hardening sealant (Airflow part number: 90000356).

Pairing Remote Controls

Two RF remote controllers are available, a basic controller (Part No: 90001489) and a controller with built in CO₂ sensor (Part No: 90001490). Each MEV WH4H unit must have at least one RF Controller. Each unit can be paired with up to 20 x controllers. A mixture of controllers can be used to suit application.

Before pairing the unit should be isolated from the electric supply for a minimum of 5 x seconds. The LED on the controller will flash red then green.

Pairing Remote Controls Cont.

When electric power to the unit is re-installed the LED red / green on the PCB (See page 8) will flash red and green then remain green for 3 x minutes. In this time the RF controllers can be paired to the unit.

Basic Controller (90001489) Pairing

Note: Ensure controller has a battery fitted.

Pairing the controller(s) to one unit is done by pressing the “1” and “auto” buttons, on the controller simultaneously, while the unit PCB LED is green, until the LED on the controller flashes red – green - red. To show the pairing is complete the LED on the unit PCB and the LED on the controller will flash green ten times. Also, the unit will run for a short period at a higher speed.

Alternative pairing procedure. Leave the unit connected to the electric supply. Remove the white top cover from the unit. Briefly press the push button on the units PCB. See page 8.

Pairing Remote Controls Cont.

CAUTION!! Risk of Electric Shock. Do not touch other parts of the PCB as they remain live. After which the LED will remain green for 3 x minutes. In this time the controller can be paired to the unit by pressing the “1” and “auto” buttons on the controller as previously stated.

Pairing controller(s) to Several Units. To do this follow the alternative pairing procedure except push buttons “2” and “auto” on the controller simultaneously for 3 x seconds.

To replace a basic controller, all controllers must be un-paired to the units PCB, then any controller(s) needed must be re-paired to the units PCB.

CO₂ Controller (90001490) Pairing

Note: Ensure controller is connected to 230V – 50Hz single phase power supply.

Before pairing the unit should be isolated from the electric supply for a minimum of 5 x seconds.

Paring Remote Controls Cont.

When electric power to the unit is re-installed the LED red / green on the PCB (See page 8) will flash red and green then remain green for 3 x minutes. In this time the RF controllers can be paired to the unit. Briefly press the control button on the CO₂ controller once. A red LED will flash on the controller. Then press the control button for a further 7 x seconds until a blue LED lights up and the status LED flashes alternately red and green. When pairing has been successful the LED on the unit and controller will flash ten times and the fan speed will increase for a short while. Paring additional CO₂ controllers is carried out in the same way.

Un-Paring Controllers to a unit. Remove the white top cover from the unit. Press the push button on the units PCB. (See page 8) for 15 x seconds until the LED is simultaneously red and green (orange). Release the push button, the LED will flash red–green–red. All connections to controllers are now cut. The airflow requirements of a dwelling should be

Fan Performance Settings


calculated and conform to Building Regulations Part F, Volume 1.

This unit has two airflow performance curves to choose from. Each performance curve is broken down into three bands, low, medium, and high. Each band has a number of fan speeds to choose from. All of which can be set by adjusting the dip-switch settings. The dipswitch can be found on the units PCB, which is under the unit's white, top protective cover held on by "D" shaped tabs. (See fig.A and B on page 10). Choice of appropriate band speed the fan runs at is by using the RF controllers (Airflow part numbers: 900001489 and 90001490).

Note: When controls are set to "auto" the unit will run on the low fan speed range until humidity or CO² is sensed. When this happens, the unit will automatically increase the fan speed to the medium range then if needed to the high range. Dipswitch 8 controls the overrun time when the unit is sensing humidity. When in the OFF position = 15 minutes. When in the ON position = 30


Fan Performance Settings Cont.

Table A

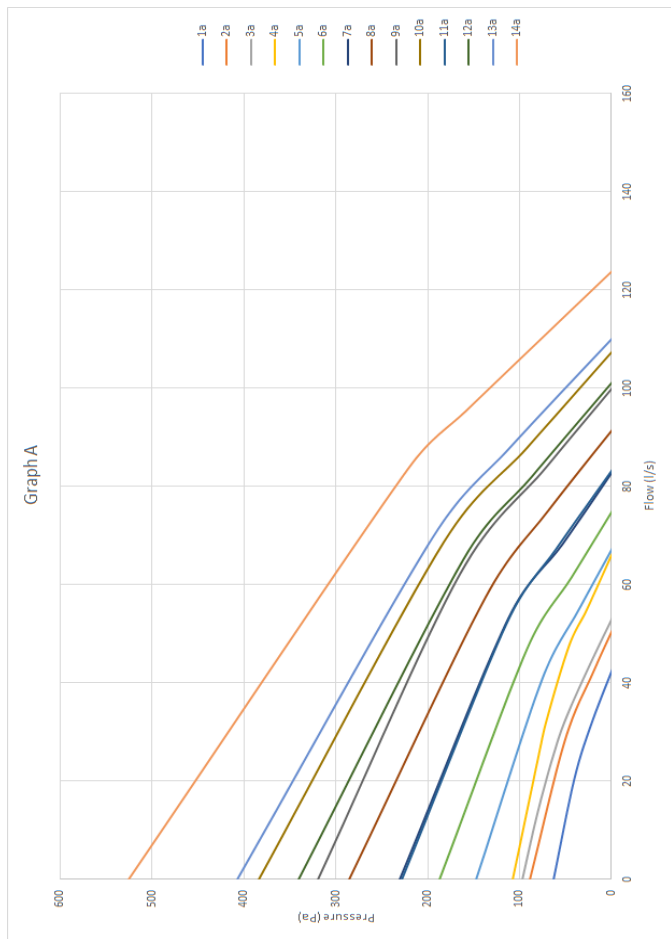
Fan Speed Band	Fan Speed Setting	Dip Switch Setting							Minimum Airflow at stated Pressure	Minimum Pressure at stated Airflow
		1	2	3	4	5	6	7		
	Switch Number 									
Low	1a	OFF							20.46 (74)	41
Low	2a	ON							28.20 (102)	51
Medium	3a		OFF	OFF	OFF	OFF	OFF	OFF	33.17 (119)	49
Medium	4a		ON	OFF	OFF	OFF	OFF	OFF	47.50 (171)	46
Medium	5a		OFF	ON	ON	OFF	OFF	OFF	54.70 (197)	36
Medium	6a		ON	ON	ON	OFF	OFF	OFF	61.60 (222)	44
Medium	7a		OFF	OFF	OFF	ON	ON	OFF	68.28 (246)	53
Medium	8a		ON	OFF	OFF	ON	ON	OFF	74.81 (269)	70
Medium	9a		OFF	ON	ON	ON	ON	OFF	84.12 (303)	70
Medium	10a		ON	ON	ON	ON	ON	OFF	87.70 (316)	92
High	11a							OFF	68.00 (256)	60
High	12a							ON	81.90 (295)	87
High	13a							OFF	88.30 (318)	112
High	14a							ON	95.35 (343)	158

Fan Performance Settings Cont.

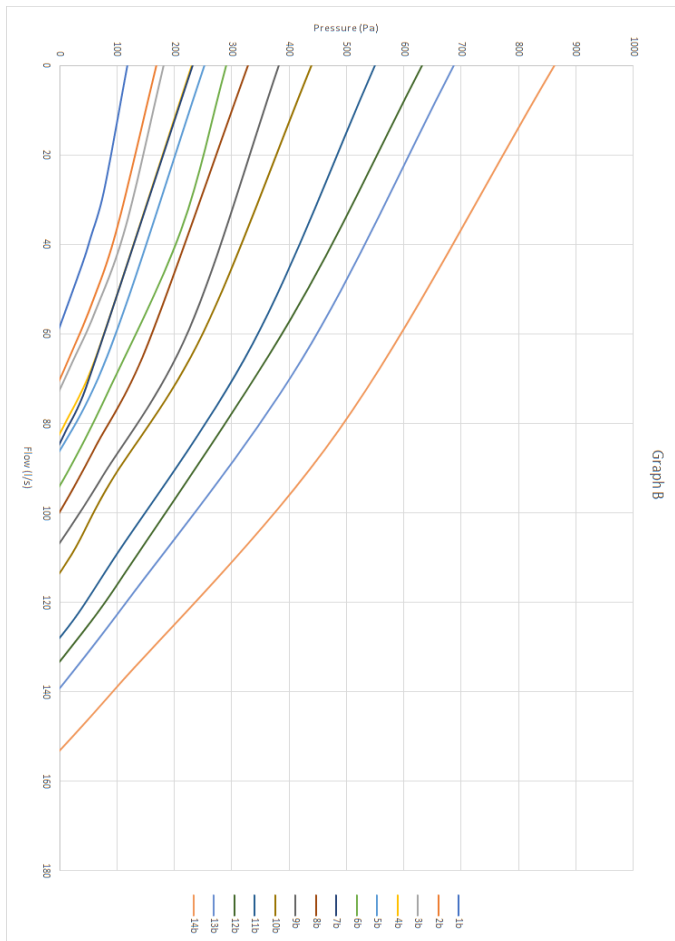
Table B

Fan Speed Band	Fan Speed Setting	Dip Switch Setting							Minimum Airflow at stated Pressure	Minimum Pressure at stated Airflow
		1	2	3	4	5	6	7		
	Switch Number 									
Low	1a	OFF							20.46 (74)	41
Low	2a	ON							28.20 (102)	51
Medium	3a		OFF	OFF	OFF	OFF			33.17 (119)	49
Medium	4a		ON	OFF	OFF	OFF			47.50 (171)	46
Medium	5a		OFF	ON	ON	OFF	OFF		54.70 (197)	36
Medium	6a		ON	ON	ON	OFF	OFF		61.60 (222)	44
Medium	7a		OFF	OFF	OFF	ON	OFF		68.28 (246)	53
Medium	8a		ON	OFF	ON	ON	OFF		74.81 (269)	70
Medium	9a		OFF	ON	ON	ON	OFF		84.12 (303)	70
Medium	10a		ON	ON	ON	ON	OFF		87.70 (316)	92
High	11a						OFF	OFF	68.00 (256)	60
High	12a						ON	OFF	81.90 (295)	87
High	13a						OFF	ON	88.30 (318)	112
High	14a						ON	ON	95.35 (343)	158

Flow / Pressure Graph A



Flow / Pressure Graph B



Graph B

Service and Maintenance

Safety first: Always isolate the fan unit from the power supply before carrying out any work on the fan. All electrical and mechanical installation guidelines stated in these instructions should be followed. Only competent qualified persons should embark on service and maintenance of these fan units.

All central extract systems should be serviced on a planned / regular basis to stop excess build-up of dirt, grease, and dust etc. The system should be inspected initially by a competent person on a six-monthly basis. After several inspections the competent person will be able to adjust the frequency of the service to suite. The frequency of service will be dependent on a number of things, lifestyle and where the property is positioned etc. Failure to do so causes excess system pressure which will reduce the systems airflow, make the system noisier and ultimately lead to fan unit failure. To clean the unit, firstly remove the unit's white, top protective cover held on by "D" shaped tabs.

Service and Maintenance Contd.

(See fig.A, B, C and D on page 10).Cleaning of fan unit`s parts should be carried out with a damp cloth or soft brush. A damp cloth should not be used on the humidity sensor or PCB. The humidity sensor is connected to the underside of the PCB.

The use of aggressive cleaning agents or high-pressure cleaning techniques / equipment is not recommended and can cause permanent damage and loss of fan performance.

Things to check when the unit is split: Are all the duct connection to the box securely fixed? Does the fan impeller rotate freely and quietly? Is there any visible damage? After re-connecting the electrical supply, the unit should be switched on. If there is any undue noise, switch the unit off immediately and the fault rectified. If the fault cannot be found contact Airflow Developments Ltd for advice at sales@airflow.com.

Fan and Packaging Disposal


These fan units consist mainly of steel, iron, aluminium, copper, electrical insulation materials, cables, wires, and plastic.

Complete fans and parts that are at end of life due to wear and tear, corrosion, fatigue and or other effects that cannot be discerned must be disposed of in the correct manner conforming to local and / or international guidelines and regulations. Intended or unintended further use of worn parts, e.g., impellers and bearings etc. can result in danger to persons, the environment and fan unit.

Packaging materials should be disposed of in the correct manner conforming to local and / or international guidelines and regulations. Some packaging can be re-cycled. In this case seek advice from a qualified waste management company.



Assorted Accessories

Part Number	Description	Product Image
9041130	AirflexPro Ducting Round	
9041546	125mm Ø x 2m Round Ridged Ducting	
52641008	125mm Ø x 1m Airflex Round PVC Hose	
51849403	Metal Worm Drive Clamp for 125mm Ø Connections	
90000356	Grey Acrylic Duct Sealant Non-Hardening (380ml)	
9041223	125mm Ø Connection Terracotta Fixed Grill (Plastic)	
90000350	Roof Terminal (Seipia)	
90001489	RF Controller - Basic	
90001490	RF Controller with Built in CO2 Sensor	

Warranty

Airflow guarantees the Central Extract Fan Unit: MEV WH4H designated in these instructions for 2 years from date of purchase against faulty material or workmanship. Applicable to units installed and used in the UNITED KINGDOM.

Warranty covers the fan and not the reinstallation if required. In the event of any defective parts being found, Airflow Developments Ltd reserves the right to repair, or at our discretion replace without charge, provided the unit **has been installed in accordance with the fitting and wiring instructions supplied with each unit.**

Has not been connected to an unsuitable electrical supply.

Has not been subjected to misuse, neglect, or damage.

Has not been modified or repaired by any person not authorised by Airflow Developments Ltd.

Has been installed by a person who is recognised as a competent person.

Has only been used with Airflow Developments approved accessories.



Airflow Developments Ltd shall not be liable for any loss, injury, or other consequential damage, in the event of a failure of the equipment, arising from, or in connection with, the equipment excepting only that nothing in this condition shall be construed as to exclude or restrict liability for negligence. Full details at airflow.com/terms.

This warranty does not in any way affect any statutory or other consumer rights.



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